

# Chapter 1

## Introduction

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### CONCEPT

Universal wiring is the *highway* within a postal facility upon which information travels. One can think of universal wiring as a well-planned, more efficient way to transport the information in a facility all around the building and out to where it needs to go. Rather than requiring separate wiring systems for voice, data, video, and sensors, a universal wiring system (UWS) integrates it all into a common set of wires. This *single, integrated wiring system* is made of a collection of physical modules and subsystems that may be expanded and flexibly reshaped to suit changing needs. Universal wiring does not use the same wires for all types of transmissions; for example, voice is carried on copper wire and high-resolution video on fiber-optic cable. But the wiring systems can run physically in parallel, sharing outlets and wiring center concentrations.

- ◆ *an adaptable communications infrastructure*
- ◆ *shared passages*
- ◆ *centralized management*

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### BENEFITS OF UNIVERSAL WIRING

- *Lower Life-Cycle Maintenance and Operating Costs.* Instead of the “spaghetti” wiring typically found in buildings today, structured wiring is more manageable and, therefore, less costly to maintain. (See exhibit 12.) When universal wiring is used in new buildings, it has a return on investment (ROI) of 24-26 percent over a 10-year period; for major renovations, the ROI is 17-19 percent over 10 years.
- *Streamlined Design Process.* Universal wiring provides detailed, early design guidance. This helps avoid costly changes to designs and installations resulting from misinterpretations of functional or technical requirements.
- *No Rewiring for New Deployments.* Current and future communications needs can be handled without rewiring the facility. Equipment and applications can be deployed faster, because there is no waiting for wires to be installed before deployment can take place.

- ◆ *more manageable*
- ◆ *no costly design changes*
- ◆ *will meet future needs*



Ordinary Wiring



Universal Wiring

### One of the Benefits of Universal Wiring

Exhibit 12

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## POLICY

Use the following guidelines when planning wiring in a facility:

- a. *New Facilities.* Install universal wiring in all new major facilities (GMFs, BMCs, etc.) and new Levels 11 through 24 associate offices.
- b. *Additions.* If the facility is scheduled for major reconstruction or expansion, install universal wiring in the new area.
- c. *Renovations.* If the facility is undergoing significant renovation for reasons other than updating its wiring, install universal wiring throughout the renovated areas. Examples of such renovation include asbestos removal, new HVAC systems, or renovations to upgrade power.
- d. *Existing Facilities Needing Structured Wiring.* Facilities that have requirements for structured wiring to support high-speed local area networks (LANs), data, and video equipment, but which are not undergoing additions or renovations, should follow the precepts of the UWS but reduce its stringent requirements to meet local needs.

- ◆ *new facilities*
- ◆ *additions*
- ◆ *renovations*

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## UNDERSTANDING UNIVERSAL WIRING

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### Functional Areas

Six functional areas in postal facilities have distinctive requirements for communications:

- Administrative Offices
- Retail
- Workroom Floor
- Lookout Gallery

- Vehicle Maintenance Facility
- External Monitoring and Entry

Descriptions of the functional areas and related standards are in chapter 2.

## 142 **Physical Subsystems**

Six physical subsystems make up the universal wiring in a building:

- Information Outlet (IO)/Termination
- Wiring Centers
- Horizontal Wiring
- Backbone Cabling
- Cross-Connects
- Campus

A description of the subsystems and related standards and specifications is in chapter 3.

- ◆ *functional areas*
- ◆ *subsystems*
- ◆ *standards*
- ◆ *methodology*

## 143 **Wiring Standards**

The standards and specifications for specific wiring components that are used to properly design universal wiring for a facility are described in chapter 4.

## 144 **Design Methodology**

A standard wiring design methodology and checklist describe the steps necessary to actually design the wiring. The wiring design methods are described in chapter 5 for each type (level) of facility.

## 145 **Other Information**

The appendices contain:

- a. Electrical grounding requirements for safety.
- b. Information on applying the universal wiring standard (UWS) to data communications and local area networks (LANs).
- c. The feedback form.

## 15 **WHERE TO GET HELP**

Staff of the Information Systems Telecommunications Support Center (ITSC) are trained to assist in all aspects of universal and structured wiring systems.

Contact:

PROGRAM MANAGER  
ITSC  
RALEIGH NC 27668-9700  
TELEPHONE 919-501-9100

# HELP!

*Where and how to  
get it.*